Ambifixes: cross-linguistic variation and possible origins

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1. Definition

An ambifix is an affix that can occur both as a prefix and as a suffix.

The term was used for the first time by Eric Hamp (1959), cf. also Malkiel (1978: 145), Hall (2000: 536), Mugdan (2015: 268).

1. Definition

San Francisco del Mar Huave (Huavean, Guatemala; Kim 2008: 324):

(1) a.   *t*-a-jch-ius   prefix
          CMPL-TV-give-1
          'I gave'

     b.   *pajk-a-t-u-s*   suffix
          face.up-V-**CMPL**-ITR-1
          'I laid face up'

CMPL – completive, ITR – intransitive, (T)V – theme vowel

1. Definition

Some caveats:

- ambifixes should not be confused with circumfixes, which obligatorily contain two parts; however, there are cases where both the prefixal and the suffixal versions of an ambifix co-occur in one form;

- we exclude affixes that alternate between prefixed/suffixed and infixed positions, although some ambifixes actually also occur as infixes.

1. Definition

The term "ambifix" is more appropriate than "mobile affix":

- the latter can refer to affixes showing variable position in a string without changing orientation with respect to the root.

1. Definition

Besleney Kabardian (Northwest Caucasian, Russia; own fieldwork): mobile prefix, not ambifix

(2) a. *sə-q̇-**a**-de-ḳʷ-a*

   1SG.ABS-CSL-3PL.IO-COM-go-PST

   b. *s-**a**-q̇ə-de-ḳʷ-a*

   1SG.ABS-3PL.IO-CSL-COM-go-PST

   a=b 'I came with them.'

ABS – absolutive, CSL – cislocative, COM – comitative applicative, IO – indirect object

1. Definition

Affixes vs. clitics (cf. Spencer & Luís 2012, 2013):
* both are bound morphs, i.e. cannot occur in isolation;
* affixes are positioned with respect to roots, stems or words;
* clitics are positioned with respect to larger constituents.

Hinges on the definition of "word", which is itself loaded with problems (Haspelmath 2011, Tallman 2020 etc.).

1. Definition

Macedonian (Indo-European > Slavic; Spencer & Luís 2012: 65):

(3) a. ***Mi=go**=dad-e*   *Vera   včera*

        1SG.DAT=3SG.M.ACC=give-AOR.3SG   Vera   yesterday

        'Vera gave me it yesterday.'

   b. *Nosi=**mi=go**!*

        bring.IMP.2SG=1SG.DAT=3SG.M.ACC

        'Bring it to me!'

AOR – aorist, IMP – imperative

1. Definition

Bulgarian (Indo-European > Slavic; Avgustinova 1997: 50):

(4) a.   *Otnovo=ja   vidja-x*

         again=3SG.F.ACC   see-AOR.1SG

         'I saw her again.'

    b.   *Vidja-x=ja / *Ja=vidja-x*

         see-AOR.1SG=3SG.F.ACC

         'I saw her.'

1. Definition

Both Bulgarian and Macedonian bound pronouns are verb-adjacent, however, there is a major difference:

- in Bulgarian, they occur in the second position in the clause, hence are clitics;

- in Macedonian, they are no longer sensitive to the second position or any extra-verbal syntax, hence are affixes, i.e. ambifixes.

1. Definition

Ambifix vs. unrelated prefix and suffix:

- identity of function: the prefix and the suffix should express the same featural / semantic content;

- identity of form: the prefix and the suffix should have one phonological form, with only the most transparent phonological modifications allowed.

1. Definition

Some borderline cases:

- instrumental case suffix -*la* vs. instrumental applicative prefix *la*- in Abkhaz and Abaza (Northwest Caucasian);

- verbal subject agreement prefixes vs. object agreement suffixes in Walman (Torricelli, New Guinea).

2. Database

Ambifixes have so far received little attention from linguists.

- in theoretical morphology only recently (Crysmann & Bonami 2016; Stump 2017, 2022);

- in morphological typology not at all (e.g. not mentioned in Bickel & Nichols 2007: 198–201).
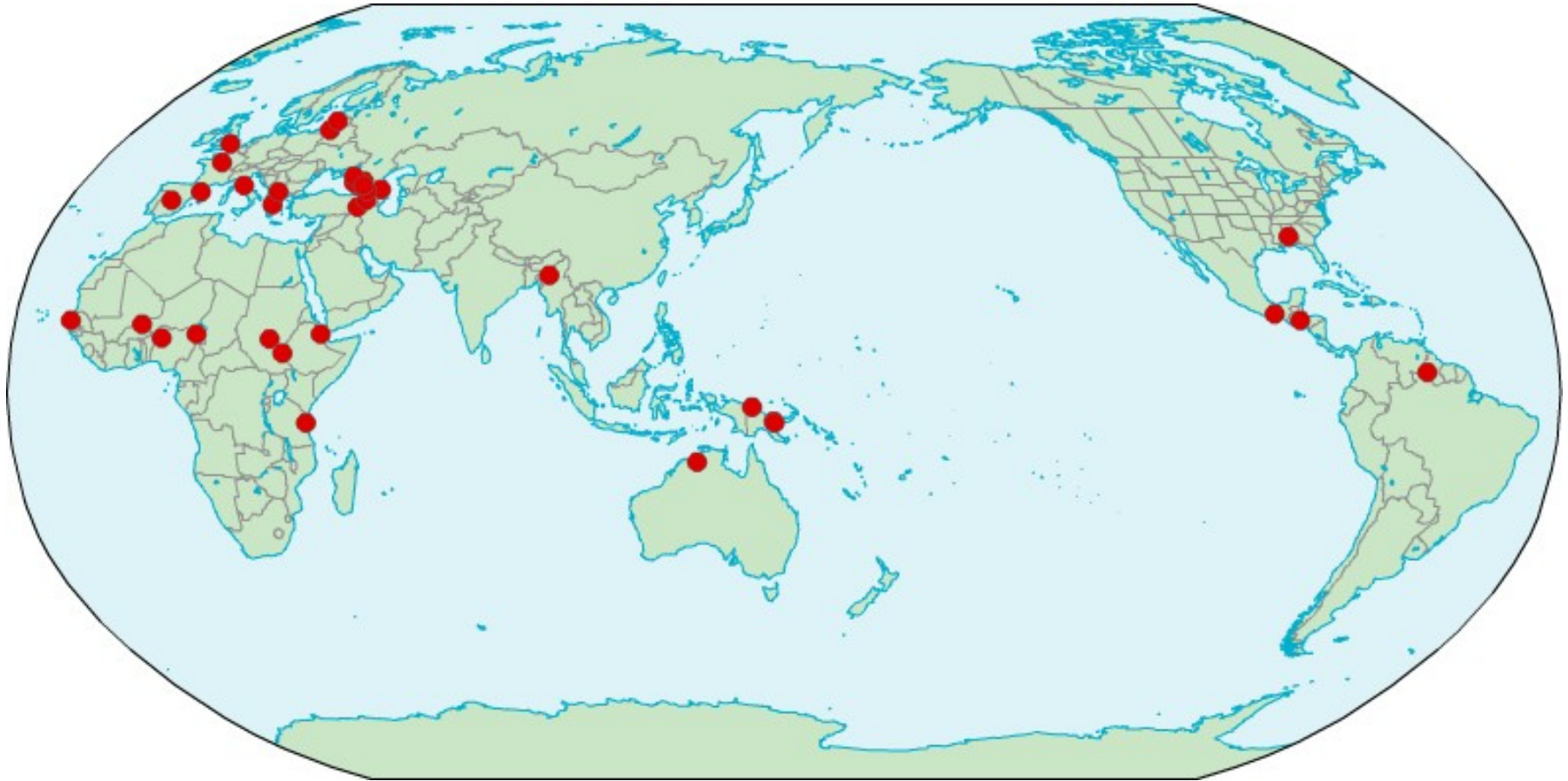
We aim to fill this gap from an empirical perspective.

2. Database

This is work in progress, so neither the database nor our results are definitive.

A convenience sample of ca. 40 languages (including different varieties of one language) from all over the world.

2. Database

Map created with the help of WALS Interactive reference tool,
https://www.eva.mpg.de/lingua/research/tool.php

2. Database

The database includes the following information about each instance of ambifixation:

- single affix vs. a class of affixes;
- function(s) expressed;
- type of conditioning for the choice of orientation;
- (putative) diachronic origins;
- any other relevant information.

3. Typology

Our typology of ambifixes is based on the type of conditioning factors determining the prefixal vs. suffixal position of ambifixes:

- phonological
- morphotactic
- paradigmatic
- part of speech
- lexical
- syntactic and/or semantic

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Reflects types of explanation we were able to propose (based on our preconceptions) rather than anything really objective.

3.1. Phonological conditioning

The orientation of the affix is determined by the phonological environment (e.g. the phonological composition of the root or stem it attaches to, Paster 2006: 253–254).

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- Most known cases: consonantal vs. vocalic edge
- Also: syllable structure (negation in Alabama, Montler & Hardy 1991)
- Other potential factors: stress (so far unattested) and tone (disputable, see Jenks & Rose 2015 on Moro)

3.1. Phonological conditioning

Afar (Cushitic, Ethiopia; Fulmer 1991): various verbal affixes occur prefixed to roots beginning in vowels except /a/ and suffixed to roots beginning in /a/ or consonants:

(5) a. ***t**-okm-è*
      2/3SG.F-eat-PFV
        'You/she ate.'

   b. *yab-**t**-à*
      speak-**2/3SG.F**-IPF
        'You/she speak(s).'

3.1. Phonological conditioning

Phonologically conditioned ambifixes seem to constitute the best-known and the most widely-discussed case.

We are more interested in non-phonologically conditioned ambifixes.

3.2. Morphotactic conditioning

The orientation of the affix is determined by the linear morphological structure of the word, i.e. by the presence of other affixes.

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- One of the well-known cases is the Lithuanian reflexive discussed by Milena Šereikaitė (this conference).

3.2. Morphotactic conditioning

Murrinhpatha (Daly, Northern Australia; Nordlinger 2010: 334) dual non-sibling marker occurs in prefixal position, but when the latter is occupied by an object marker, it appears as a suffix:

(6) a. *bam-**ngintha**-ngkardu*

        3SG.SBJ.NFUT-DU.F-see

        'They two (non-siblings) saw him/her'

   b. *bam-**ngi**-ngkardu-**ngintha***

        3SG.SBJ.NFUT-1SG.OBJ-see-DU.F

        'They two (non-siblings) saw me.'

3.3. Paradigmatic conditioning

The orientation of the affix is determined by the inflectional features of the wordform it occurs in (but cannot be reduced to the presence/absence of any particular morphemes).

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- How to distinguish it from syntactic and semantic conditioning discussed below?

- Depends on point of view and on our definitions of "inflectional features".

3.3. Paradigmatic conditioning

Catalan (Wheeler et al. 1999: 172-174):
- prefixes in finite forms (except positive imperative)
- suffixes in positive imperative and non-finite forms

(7) a. *m'ajuda*   's/he helps me'
     b. *ajuda'm*   'help me!'
     c. *ajudar-me* 'to help me'

Remarkably, the same rule in Macedonian (Friedman 2002: 38-39).

3.3. Paradigmatic conditioning

Abkhaz (Northwest Caucasian; Chirikba 2003: 44-45) negation:

- stative verbs: suffix in all forms;
- dynamic verbs:
  - prefix in all non-finite forms and non-declarative moods;
  - in declarative moods depends on tense

Abaza and Ubykh: the same basic principle, but the details differ.

3.3. Paradigmatic conditioning

Abkhaz negation (Chirikba 2003: 44-45, 'take', 3Pl>3Sg):

	Finite	Non-finite
Present	*də-r-ga-wá-**m***	*jə́-rə-**m**-ga-wa*
Aorist	*d-rə-**m**-gá-jṭ*	*jə́-rə-**m**-ga*
Future I	*də-r-ga-rə́-**m***	*jə́-rə-**m**-ga-ra*
Perfect	*d-rə-**m**-gá-c-ṭ*	*jə́-rə-**m**-ga-c*

3.3. Paradigmatic conditioning

Yupiltepeque (extinct; Xincan, Guatemala; Rogers 2010: 224-231) subject markers:

- intransitive verbs: always prefixes

- transitive verbs: prefixes in the imperfective, suffixes in the perfective

Not all prefixes and suffixes adhere to the Same Form criterion.

3.3. Paradigmatic conditioning

Yupiltepeque (extinct; Xincan, Guatemala; Rogers 2010: 224-231) subject markers:

	prefixes		suffixes	
	Sg	Pl	Sg	Pl
1	*n-*	*lki-*	*-n/-n'*	*-lki'*
2	*k-*	*lka-/lik-*	*-ka'*	*-lik*
2 formal	*y-*	*liy-*	*-y*	*-liy*
3	*h-*	*lih-*	*-yi*	*-hri*

3.4. Part-of-speech conditioning

The orientation of the affix depends on the word class of its host.

3.4. Part-of-speech conditioning

Agreement markers in Walman (Torricelli, New Guinea; Dryer 2019: 176-176): prefixes with verbs and suffixes with adjectives.

(8) a. *pelen* ***y****-aykiri*

dog PL-bark

'The dogs are barking.' verb

b. *nypeykil lapo-**y***

tree.PL big-PL

'big trees' adjective

3.5. Lexical conditioning

The orientation of the affix is determined by lexically-specified features of the base (e.g. inflection class).

- Not always easy to distinguish from part-of-speech based conditioning (e.g. stative vs dynamic verbs in Abkhaz – different lexical classes or different parts of speech?).

3.5. Lexical conditioning

Máku (isolate, Brazil; Zamponi 2021: 102-108):

	'stand'	'wash'	'see'
1Sg	*te*-kai	ku<*te*>ʦi	ku-*te*
1DuIncl	*ʦe*-kai-nuʔu	ku<*ʦi*>ʦi	ku-*ʦe*-nuʔu
1DuExcl	*teke*-kai	ku<*teke*>ʦi	ku-*teke*

3.5. Lexical conditioning

English denominal/deadjectival verbs:

(9) prefix with Latinate: ***en**large*, ***en**sure*, ***en**courage*, ***en**rage* …
suffix with Germanic: *deaf**en***, *hard**en***, *sharp**en***, *strength**en*** …
both: ***en**light**en***, ***en**liv**en***, ***em**bold**en*** + ***em**bigg**en***
etc (Klégr 2018)

3.6. Syntactic/semantic conditioning

The orientation of the affix is determined by syntactic or semantic properties of the construction its hosting word occurs in.

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- Shouldn't all such cases be recast in terms of paradigmatic features?
- Possibly, but still they look different from the cases discussed in 3.3.
- Depends on point of view.

3.6. Syntactic/semantic conditioning

French subject indexes: prefixes in declarative, suffixes in interrogative clauses.

(10)   a.   *Il travaillait* 'He was working'

        b.   *Travaillait-il?* 'Was he working?'

        c.   *Où travaillait-il?* 'Where was he working?'

"Declarative" vs. "interrogative" feature signalled by the position of the subject marker?

Cf. Culbertson (2010) on affixal status.

3.6. Syntactic/semantic conditioning

Indicative marker in Gyumri Armenian (Bezrukov, Dolatian 2020):

prefix	suffix
habitual	progressive
realis	irrealis
preverbal nuclear stress	no preverbal nuclear stress
narrow argument focus	broad focus

3.6. Syntactic/semantic conditioning

Gyumri Armenian (Bezrukov, Dolatian 2020: 3-5):
(11) a.   *šun-ə   vazze-**gə***
      dog-DEF run-**IND**
      'The dog is running.'
   b.   *šun-ə   **kə**-vazze*
      dog-DEF   **IND**-run
      'The dog (habitually) runs. / The DOG is running.'

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(11) a.   *šun-ə*   *vazze-**gə***

     dog-DEF run-**IND**

     'The dog is running.'

   c.   *šun-ə*   *tun*   ***kə**-vazze*

     dog-DEF   home   **IND**-run

     'The dog is running home.'

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Gyumri Armenian (Bezrukov, Dolatian 2020: 3-5):
(11)a. *šun-ə   vazze-**gə***
       dog-DEF run-**IND**
       'The dog is running.'
  c. *šun-ə   tun   **kə**-vazze*
       dog-DEF   home   **IND**-run
       'The dog is running home.'

Which feature(s) determine affix orientation?

3.6. Syntactic/semantic conditioning

Ut-Ma'in (Atlantic-Congo, Nigeria; Paterson 2019: 104) gender markers: suffixed to the noun in some syntactic environments and prefixed in others.

(12) a. *mɔ́ŋgɔ̀r-tɔ̀* *àzgɔ̀-sː-tɛ̀* subject

mango.fruit-**C6** pour-ITR-PRF

'Mango fruit rolled out (of the basket).'

b. *wā* *ká-ːn* *ɔ̄t-mɔ́ŋgɔ̀r* object

C1.SBJ pluck-DIST **C6**-mango.fruit

'He picked mango fruits.'

C – gender marker, DIST – distal, ITR – intransitive, PRF – perfect

3.6. Syntactic/semantic conditioning

Ut-Ma'in gender markers (Paterson 2019: 59-61):

prefixes	suffixes
citation form	modified by an adjective, definite marker, possessive pronoun or relative clause
modified by a numeral	
unmodifed object	unmodified subject
modifier of another noun	
object of adpositions	

3.6. Syntactic/semantic conditioning

Ut-Ma'in gender markers (Paterson 2019: 59-61):

prefixes	suffixes
citation form	modified by a adjective,
modified b	oun or
unmodife	ect
modifier o	
object of adpositions	

What kind of a morphosyntactic feature could the orientation of Ut-Ma'in gender markers be associated with?

3.6. Syntactic/semantic conditioning

Xincan person markers again (Rogers 2010: 176-186):

- suffixes in inalienable possession

- prefixes in alienable possession

- not a purely lexical distinction, since some nouns allow alternative construal

3.6. Syntactic/semantic conditioning

Guazacapán (Xincan; Rogers 2010: 178, 182, 185)

(13) a. *uxti-**ka'***   'your spouse's parents' (inalienable)

    b. ***ka**-xuxi*   'your beard' (alienable)

(14) a. *mak'u-**ka'*** 'your house' (you earned it from personal effort)

    b. ***ka**-maku*   'your house'

3. Typology: summary

- Some of the types are less clear-cut than others.

- Many ambifixes show mixed and transitional types of conditioning.

- Still, it is remarkable that orientation of an affix with respect to the root can depend on such a wide range of factors (even in the same language).

4. Diachronic scenarios

Very tentative, since in many cases the origins of ambifixes can only be inferred or reconstructed.

Still, at least three pathways to ambifixation can be discerned:

1. Affixalisation of phrasal/sentential clitics.
2. Adverbs/adpositions suffixed to nouns and prefixed to verbs.
3. Univerbation of inflected grammatical elements "on the wrong side" of the host.

4.1. Clitics > ambifixes

A scenario well-documented for Romance and Balkan Slavic object pronouns.

stage 1 (BCMS): X=om (Y) V ~ V=om X

stage 2 (Bulgarian): X=om (*Y) V Y ~ V=om X

stage 3 (Macedonian): (X) om-V ~ (X) V-om

4.1. Clitics > ambifixes

stage 1 (BCMS):   X=om (Y) V ~ V=om X

stage 2 (Bulgarian):   X=om (*Y) V Y ~ V=om X

- Transition from stage 1 to stage 2 presupposes that clitics become verb-adjacent (only possible if at stage 1 the "clitic-verb" sequence statistically predominates in discourse).

4.1. Clitics > ambifixes

stage 2 (Bulgarian):   X=om (*Y) V Y ~ V=om X

stage 3 (Macedonian):   (X) om-V ~ (X) V-om

- Transition from stage 2 to stage 3 crucially involves conventionalisation of statistical tendencies in the use of different verbal forms in V=om X vs. X=om V clauses as paradigmatic restrictions on the position of verb-adjacent markers.

4.2. Affixalisation of adverbs or adpositions

- Adverbials or adpositions (and probably other word classes, e.g. classifiers) can encliticise to nouns becoming (e.g. case) suffixes and procliticise to / incorporate into verbs becoming (e.g. spatial) prefixes.

- So far we have found examples in the languages of the Caucasus, but we are sure that this is attested more broadly.

4.2. Affixalisation of adverbs or adpositions

Abkhaz (Northwest Caucasian, Hewitt 1979: 114) instrumental:

(15) a. *a-žahʷa*   ***a-la***

     DEF-hammer   3SG.IO.N-with

     sə-jə-sə-jṭ

     1SG.ABS-3SG.M.IO-hit-DCL

     'I hit him with the/a hammer.'

     (adposition)

     DCL – declarative, DEF – definite, N – non-human

4.2. Affixalisation of adverbs or adpositions

Abkhaz (Northwest Caucasian, Hewitt 1979: 114)
instrumental:

(15)b.   *a-žahʷa-**la***   *sə-jə-sə-jṭ*
          DEF-hammer-INS   1SG.ABS-3SG.M.IO-hit-DCL
          'I hit him with the/a hammer.'
          (enclitic > case suffix)

DCL – declarative, DEF – definite, N – non-human

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Abkhaz (Northwest Caucasian, Hewitt 1979: 114)
instrumental:
(15)a.   *a-žahʷa*   ***a-la***
         DEF-hammer   3SG.IO.N-with

         sə-jə-sə-jṭ
         1SG.ABS-3SG.M.IO-hit-DCL
         'I hit him with the/a hammer.'
         (adposition)

   DCL – declarative, DEF – definite, N – non-human

4.2. Affixalisation of adverbs or adpositions

Abkhaz (Northwest Caucasian, Hewitt 1979: 114) instrumental:

(15)c.　*a-žahʷa*
　　　　DEF-hammer
　　　　*s-**a-la**-jə-sə-jṭ*
　　　　1SG.ABS-3SG.IO.N-INS-3SG.M.IO-hit-DCL
　　　　'I hit him with the/a hammer.'
　　　　(incorporation > applicative prefix)

　　DCL – declarative, DEF – definite, N – non-human

4.3. Univerbation in counterposition

An element hosting a prefix resp. suffix can be suffixed resp. prefixed, resulting in so-called "counterposed affixes" (Stump 2022):

(16) a.   m-X ~ X m-Y > m-X ~ X-m(-y)

     b.   X-m ~ Y-m X > X-m ~ (y-)m-X

4.3. Univerbation in counterposition

Ono (Trans-New-Guinea > Finisterre-Huon, New Guinea; Wacke 1930-31: 174, 178), cf. Suter (2012, 2018) for a comparative and historical perspective.

- A limited number of verbs take object prefixes.
- Verbs 'see' and 'give' productively suffix to non-inflected verbs serving as markers of P and R indexing.

4.3. Univerbation in counterposition

Ono (Wacke 1930-31: 174-5, 178-9), present tense 3Sg subject:

	'see'	'protect'
1Sg	*n-an-maike*	*ware-nan-maike*
2Sg	*g-an-maike*	*ware-gan-maike*
1Pl	*ŋ-on-maike*	*ware-ŋon-maike*

4.3. Univerbation in counterposition

Ono (Wacke 1930-31: 174-5, 178-9), present tense 3Sg subject:

	'give'	'cook for smb'
1Sg	*n-in-maike*	*mire-nin-maike*
2Sg	*g-in-maike*	*mire-gin-maike*
1Pl	*ŋe-bon-maike*	*mire-ŋebon-maike*

4.3. Univerbation in counterposition

In nominals:

No doubtless examples yet, but nominal gender suffixes in a number of Niger-Congo languages with generally prefixing gender marking (e.g. Fula [Mc Laughlin 2015] or Akebu [Makeeva, Shluinsky 2018]) might stem from encliticised pronouns, see Creissels (to appear: fn 11) for this scenario.

5. Summary

- Ambifixes are not a cross-linguistically rare phenomenon, although they are distributed quite unevenly.

    - Is there any correlation with other characteristics of morphology (e.g., absence of fusion, affix invariance, etc.)?

5. Summary

- A remarkable degree of cross-linguistic variation is observed in the factors that determine the orientation of ambifixes, from phonotactics through various types of morphology all the way to semantics and syntax, with many intermediate cases in between.

  - What principles influence which explanation we choose?

5. Summary

- There is more than one diachronic pathway to ambifixation.

  o Why do some ambifixes remain while others turn into simple prefixes or suffixes?

- Much more remains to be investigated.

Thank-you for your-attention!

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